SUPPORT FOR THE AMENDMENT

Claims 1-9 and 11-21 are currently amended.

Claim 22 is canceled.

Claims 23-25 is added.

Support for the amendments to Claim 1 is found at page 12, lines 13-15 of the specification.

Support for Claim 23 is found at page 12, lines 15-17 of the specification.

Support for Claims 24 and 25 is found in Claims 1 and 5, respectively.

Claims 1-9 and 11-21 are amended for clarity.

REMARKS/ARGUMENTS

Applicants thank Examiner Dang for indicating that Claims 17-21 would be allowable if rewritten to overcome the rejections under 35 U.S.C. §112, second paragraph. As such, Claim 17 is rewritten in independent form and obviates the rejection under 35 U.S.C. §112, second paragraph. Withdrawal of the rejection is requested and Applicants respectfully submit that Claims 17-21 are directed to allowable subject matter.

The rejection of Claims 1-16 under 35 U.S.C. §112, second paragraph is obviated by the amendments to the claims. Withdrawal of the rejection is requested.

The rejection of Claims 1-15 under 35 U.S.C. §102(b) or under 35 U.S.C. §103(a) over U.S. Patent No. 5,929,295 (Wu et al.) is respectfully traversed.

The presently claimed invention is directed to a process for the preparation of a mixture comprising mesitylene and durene, said process comprises treating pseudo-cumene with a catalytic composition at a temperature ranging from 210 to 450°C and a pressure ranging from 1 to 50 bar to obtain said mixture comprising mesitylene and durene, wherein

said catalytic composition comprises a zeolite, wherein said zeolite has a spaciousness index equal to or greater than 3, wherein said zeolite is in acid or prevalently acid form, and wherein said zeolite is not impregnated with one or more metals used for hydrogenation reactions (see Claim 1).

However, it is asserted on page 4 of the Office Action that "Wu discloses a process of treating a pseudocumene with beta-zeolite catalysts having similar characteristics as cited in claims at a temperature ranging from 250-1000°C and a pressure ranging from 10-2000 psig." However, Applicants submit that Wu et al. fail to describe 1) a zeolite which is not impregnated with one or more metals used for hydrogenation reactions, 2) the zeolite is an acid or prevalently acid form, and 3) the zeolite has a spaciousness index equal to or greater than 3. In particular at col. 9, line 65 – col. 10, line 33 of Wu et al., catalyst A is an alumina-bound beta zeolite which is not treated with a metal and is not acidified. The alumina-bound beta zeolite (catalyst A) is treated with an ammonium molybdate solution to produce a molybdenum-promoted zeolite. As such, Catalyst B is a metal treated zeolite which is not acidified. Catalyst C is prepared by further acid treating Catalyst B to produce a Mo-promoted acid-treated zeolite. As such, catalyst C is a metal-impregnated zeolite in acid form. Clearly, Wu et al. fail to describe the catalytic composition comprising a zeolite which is not impregnated with one or more metals used for hydrogenation reactions, which is in acid or prevalently acid form, and which has a spaciousness index of 3 or greater, as presently claimed in Claim 1.

Wu et al. further describe that catalyst A leads to a low conversion of C_{9+} aromatic compound (see col. 11, lines 22-24). Catalyst B (impregnated with a metal) improves the conversion of C_{9+} aromatic compound while decreasing the undesirable coking rate, but also significantly increases the low value hydrogenolysis products (see col. 11, lines 25-29). Wu et al. teach that only Catalyst C (the acid-treated beta zeolite impregnated with molybdenum)

had higher conversion of C_{9+} aromatic compounds, higher xylenes yield, and lower coking rates than catalysts A and B. Thus, Wu et al. teach that both the acid treatment ***and*** the metal impregnation is important to obtaining a high quality catalytic composition. However, Applicants have demonstrated high conversion of mesitylene and durene from pseudocumene, utilizing only a zeolite in acid form or prevalently acid form (which is not impregnated with metal used for hydrogenation reaction), without substantial formation of coke.

Such low formation of coke allows a constant catalytic activity for long working cycles without the need for constant regeneration of the catalytic composition. For example, the catalytic composition according to the present invention needs 1806 hours of reaction to reach a significant deactivation of the catalytic composition (see page 36, line 14 through page 37, line 7). Such long cycle times before significant deactivation of the catalytic composition is simply neither described nor suggested by Wu et al.

Furthermore, Wu et al. are directed to obtaining C_6 to C_8 compounds from C_{9+} compounds (see Abstract). As such, Wu et al. are directed to obtaining lower molecular weight compounds from a higher molecular weight feed material. However, the present invention is directed to obtaining mesitylene (C_9) and durene (C_{10}) from pseudocuemen (C_9). Wu et al. fail to describe or suggest that a high conversion of pseudocumene (C9) to mesitylene (C9) and durene (C10) could be obtained as shown by the Applicants. As one example of such high conversion, the starting feed material (see Table 3) and the resulting product from Example 16/1 (see Table 4) is reproduced below.

	Σ<C8	ΣC8	**135 TMB**	**124 TMB**	123 TMB	**1245 TeMB**	1235 TeMB	1234 TeMB	Σ>C10
Start	0.2	0.0	**0.1**	**99.2**	0.1	**0.0**	0.0	0.0	0.0
End	0.9	12.4	**20.3**	**45.8**	5.7	**6.0**	6.6	1.4	0.5

Σ<C8	are compounds having a lower molecular weight than xylenes
ΣC8	are xylenes
135 TMB	is mesitylene
124 TMB	is pseudo-cumene
123 TMB	is hemimellitene
1245 TeMB	is durene
1235 TeMB	is isodurene
1234 TeMB	is prenitene
Σ>C10	are compounds having higher molecular weight than C_{10} isomers

Such high conversion of 20.3 wt% of mesitylene and 6% of durene from a feed composition substantially free of mesitylene and durene is neither described nor suggested by Wu et al. As such, Applicants have demonstrated superior results of the presently claimed invention.

In summary, Wu et al. fail to describe or suggest all the limitations of the presently claimed invention. Furthermore, Applicants have demonstrated superior results obtained by the presently claimed invention. As such, withdrawal of the rejections is requested.

Applicants submit the application is now in condition for allowance. Early notification of such allowance is earnestly solicited.

Respectfully submitted,

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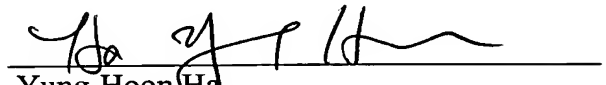
Norman F. Oblon



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